

Increase of Invasive Group A Streptococcal Infection Prompts the Need to Educate Public About Prevention

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The recent increase of reported invasive Group A Strep (GAS) cases has prompted the Indiana State Department of Health to inform residents how to protect themselves from this rare and sometimes fatal disease. The numbers of cases of invasive GAS vary annually. From January through April 2003 there were 71 cases compared to 44 cases reported from the same period in 2002.

Group A *Streptococcus* is a bacterium often found in the throat and on the skin. People may carry group A streptococci in the throat or on the skin and have no symptoms of illness. Most GAS infections are relatively mild illnesses such as strep throat or impetigo. On rare occasions, these bacteria can cause other severe and even life-threatening diseases.

How is GAS spread?

- These bacteria are spread through direct contact with mucus from the nose or throat of persons who are infected or through contact with infected wounds or sores on the skin.
- Ill persons, such as those who have strep throat or skin infections, are most likely to spread the infection.
- Persons who carry the bacteria but have no symptoms are much less contagious. Treating an infected person with an antibiotic for 24 hours or longer generally eliminates transmission of the bacteria. However, it is important to complete the entire course of antibiotics as prescribed.
- It is not likely that household items like plates, cups, or toys facilitate spreading these bacteria.

Common Streptococcal Illnesses

- **Strep throat**, the most common illness caused by this bacterium, is easily treated with a 10-day course of conventional antibiotics, usually penicillin. If left untreated or partially treated, however, it can be followed by rheumatic fever, which may result in permanent damage to the heart valves. Rheumatic fever, currently a rare disease, may occur when patients do not complete a full course of antibiotics to treat strep throat.
- A fever, sore throat, red sandpaper-like rash and a red “strawberry” tongue characterize **scarlet fever**. It is caused by several different strains of the streptococcal bacteria, all of which produce a toxin that causes the characteristic red rash. It is treated in the same manner as strep throat.
- **Impetigo** is the second most frequent illness caused by group bacteria. This is a mild skin infection accompanied by open, draining sores. Complications are rare. It is easily treated with common antibiotics.
- Rare and more serious, **glomerulonephritis** is a complication of streptococcal infections, usually strep throat or impetigo. Antibiotic treatment of the original infection does not necessarily prevent the condition, which usually resolves itself.

Invasive Infections

Infection occurs when GAS bacteria invade other parts of the body including blood and tissue. A person with GAS infection will not automatically develop invasive infection. Invasive GAS infection usually develops when a person has a weakened immune system due to other medical conditions or has an open cut on the skin that allows the bacteria to be absorbed into the tissue. However, some strains of GAS may cause invasive disease in otherwise healthy individuals.

Certain strains of GAS can lead to several forms of invasive disease, including pneumonia, meningitis, infection of the bone and an illness resembling toxic shock syndrome. Relatively uncommon, these streptococcal diseases first caught the public's notice in the late 1980s, when published reports in medical journals began to draw attention to them. The death of Muppet creator Jim Henson in 1990 as a result of an aggressive strep infection brought more visibility. In 1994, focus moved to the strain of group A *Streptococcus* causing necrotizing fasciitis.

Necrotizing Fasciitis

Necrotizing fasciitis is the medical term for a serious skin and muscle infection caused by certain strains of group A *Streptococcus*. These bacteria produce an enzyme that destroys tissue. While it occurs in less than 10 percent of the patients who develop an invasive group A infection, it can be fatal in 20 percent to 30 percent of these cases.

If necrotizing fasciitis does develop, it is usually in the wake of a skin wound that has allowed the bacteria to enter the body. The bacteria multiply in the wound and produce a toxic substance that kills skin, muscle tissue and the membrane covering the muscles. Not everyone infected with the bacteria will become ill, although the reason for this is unknown.

As is the case with other strains of group A *Streptococcus*, those that cause necrotizing fasciitis are treated with common antibiotics, although not necessarily the same ones used to treat milder diseases. Because of the extensive tissue damage associated with this kind of infection, physicians sometimes combine a regimen of antibiotics with the surgical removal of severely damaged skin and muscle tissue.

Incidence in Indiana

Indiana hospitals, physicians and other health care providers are required to report invasive GAS infections to local health departments (Figures 1, 2, and 3.).

Figure 1.

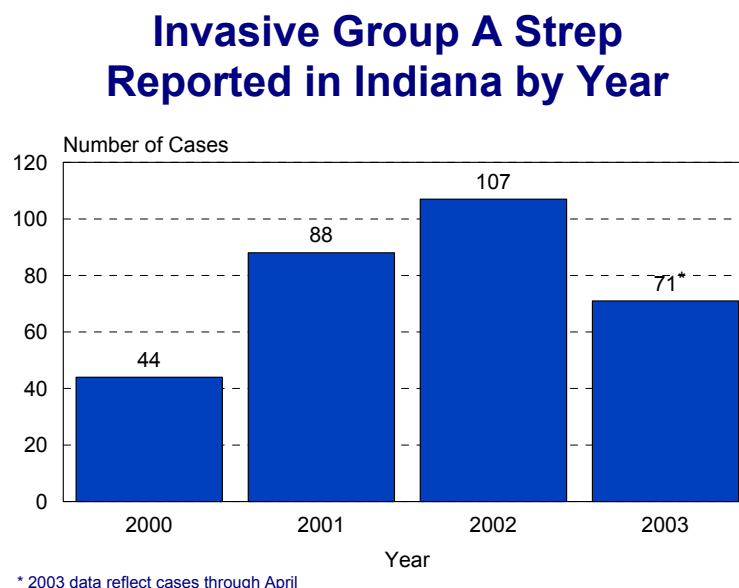


Figure 2.

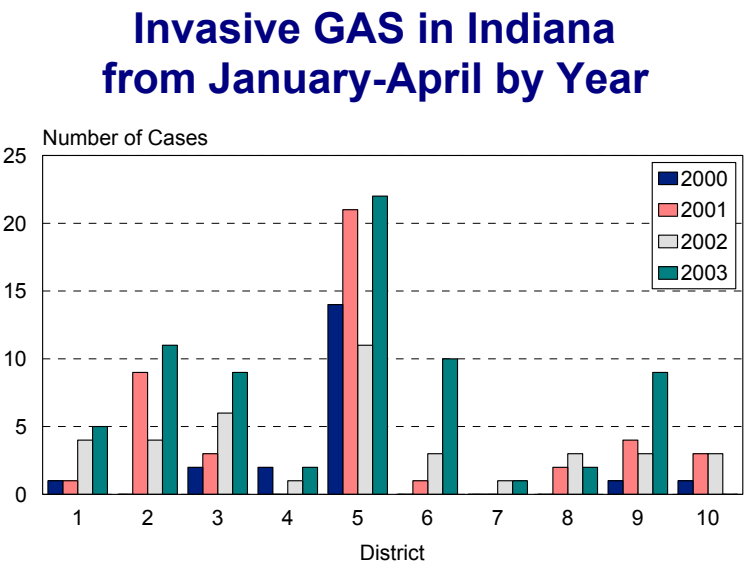
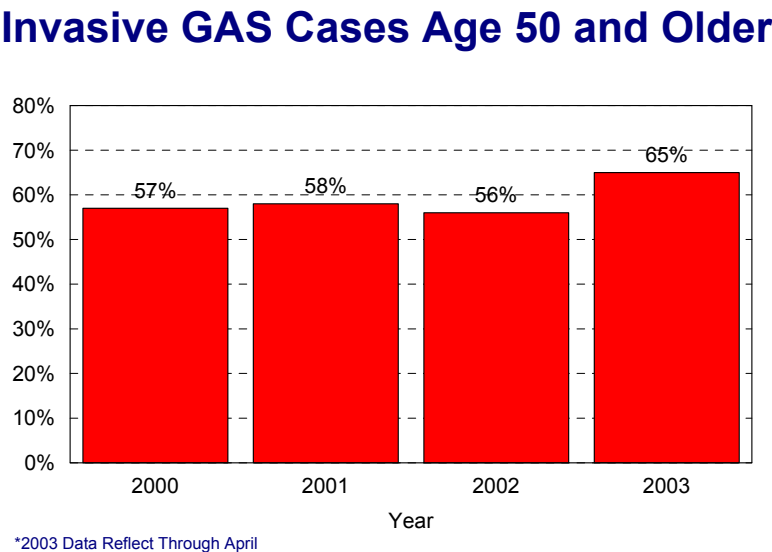


Figure 3.



Treatment

Group A *Streptococcus* bacteria are known to be sensitive to penicillin, so it is the preferred antibiotic for most types of streptococcal infections. However, necrotizing fasciitis is more effectively treated with penicillin in combination with clindamycin, or another antibiotic, and surgery.

Prevention of Invasive group A Streptococcal Infections

The spread of all types of group A *Streptococcus* infections may be reduced by:

- Completing the course of antibiotics as prescribed
- Covering one's mouth and nose when coughing/sneezing
- Wash hands after coughing and sneezing
- Wash hands before preparing foods and before eating
- Persons with sore throats should be seen by a doctor who can perform tests to find out whether the infection is strep throat; if so, the person should stay home from work, school or day care until 24 hours or more after taking an antibiotic.
- Since it is not clear why some infected persons develop necrotizing fasciitis and others do not, it is important that wounds be kept clean and covered with bandages. If a person has an infection (redness or inflammation around a wound) that does not stay centrally located, seek medical attention as soon as possible.

For more information on invasive group A streptococcal disease, contact your county health department or the Indiana State Department of Health.

Links: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm
